

Thursday 19 November 2015
19:00-20:00 Room 201, 2/F KK Leung Building



A recent article in The Economist

Black cabs

High rents and Uber drive
London's biggest taxi-driver training
centre out of business

All latest updates

What I don't know isn't knowledge

Nov 4th 2015 | Britain

Timekeeper

Like 376

Tweet 19



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Über - informal taxi services



3

AIRbnb - informal accomodation



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The critics of Über

Who's Driving You?

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The supporters of Über

FEB 6, 2013 @ 05:00 AM 70,743 VIEWS

Lessons From Uber: Why Innovation And Regulation Don't Mix



Larry Downes, CONTRIBUTOR

Best-selling author on technology, strategy and policy

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FULL BIO v

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To Über or not to Über - health and wellness

- Three cases:
 1. Getting over a heart attack
 2. Breathing difficulties (COPD)
 3. Persons with hearing impairments
- **What are the implications for start-ups of**
- **Working with the formal health care system OR**
- **Working outside the formal system?**

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Case 1 - heart attacks



Congestive Heart Failure (CHF)

What is it?	A condition where the heart is unable to pump sufficient blood to meet the body's needs.
What are the main symptoms?	Shortness of breath, excessive tiredness, leg swelling.
What are the main causes?	Coronary heart disease, high blood pressure, atrial fibrillation, heart valve disease, excessive alcohol use.
How many people have it?	The most common reason for hospitalisation of the 65+ group. Readmission to hospital ranges from 29-47%.
How big is the global economic impact?	USD 108 billion [2012]

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Heart failure economic burden statistics

The economic burden of heart failure goes beyond the cost of medicine



What is the cost of heart failure on the global economy?

~2/3

OF ALL HEART FAILURE-ASSOCIATED COSTS IN THE EU ARE DUE TO HOSPITALISATION¹



IN 2012, THE OVERALL WORLDWIDE COST OF HEART FAILURE WAS **NEARLY \$108 BILLION²**

\$65 BILLION
IN DIRECT COSTS

\$43 BILLION
IN INDIRECT COSTS

References: 1. Neumann T, Biermann J, Neumann A, et al. Heart failure: the commonest reason for hospital admission in Germany. Dtsch Arztebl Int. 2009;106(16):269-275.
2. Cook C, Cole G, Asaria P, Jabbour R, Francis DP. The annual global economic burden of heart failure. Int J Cardiol. 2014;171(3):368-376.

Heart failure economic burden statistics

The economic burden of heart failure goes beyond the cost of medicine



ESTIMATED GLOBAL VALUES OF DIRECT, INDIRECT AND TOTAL COSTS OF HEART FAILURE PER COUNTRY IN YEAR 2012²

Country name	Direct cost of HF (\$ million)	Indirect cost of HF (\$ million)	Overall HF costs (\$ million)
United States	20.900	9.800	30.700
Japan	7.844	3.576	11.420
Germany	5.340	2.040	7.380
France	4.314	1.568	5.882
United Kingdom	3.223	1.461	4.684
Canada	2.891	1.093	3.984
Italy	2.716	1.208	3.924
Russian Federation	1.774	1.209	2.983
Australia	1.951	912	2.863
Spain	1.810	810	2.619
Korea, Rep.	1.156	678	1.834
Netherlands	1.311	463	1.775
Switzerland	975	379	1.354

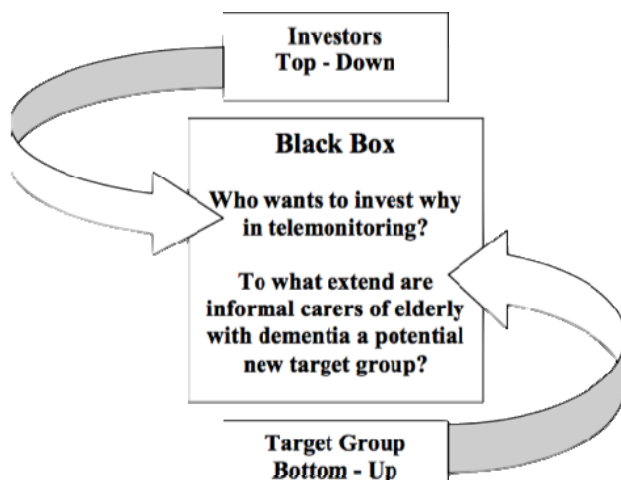
References: 1. Neumann T, Biermann J, Neumann A, et al. Heart failure: the commonest reason for hospital admission in Germany. Dtsch Arztebl Int. 2009;106(16):269-275.
2. Cook C, Cole G, Asaria P, Jabbour R, Francis DP. The annual global economic burden of heart failure. Int J Cardiol. 2014;171(3):368-376.

What are the current solutions?

- Hospitalisation
- Post-hospitalisation
 - Formal follow-up of patient rehabilitation by hospital/own doctor
 - Informal follow-up by carers in the home
 - Readmission of patients who have had a heart attack (non-compliance with medications & diet, social factors including isolation) 29-47% of cases

Source: de Vries, Larissa (2008) Telemonitoring for informal care: pitfall or dare? A top-down approach for telemonitoring: financial potential of telemonitoring for informal carers of elderly with dementia. Master's thesis in Health Services Innovation. Sittard Faculty of Health, Medicine and Life Sciences Maastricht University March – December 2008

To Über or not to Über?



Source: de Vries, Larissa (2008) Telemonitoring for informal care: pitfall or dare? Illustration on page 7A top-down approach for telemonitoring: financial potential of telemonitoring for informal carers of elderly with dementia. Master's thesis in Health Services Innovation. Sittard Faculty of Health, Medicine and Life Sciences Maastricht University March – December 2008

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Not to Über - working with formal system HIT - Heart Insufficiency Telemedicine



HIT

Heart Insufficiency Telemedicine

National project
Start January 2012
Finish June 2013
www.regionh.dk

HIT is a 1½-year demonstration project under the Capital Region of Denmark, the regional healthcare provider for Copenhagen and North Zealand. The HIT project aims to demonstrate the use of telemedicine in the treatment of patients with newly diagnosed heart insufficiency. Three Chronic Heart Failure (CHF) clinics in the region cooperate with private commercial partners to establish and evaluate the use of telemedicine. The clinics are:

- Herlev Hospital
- Bornholms Hospital
- Hvidovre Hospital

The project will evaluate at least 50 patients over a period of one year.

The HIT project originates from the work carried out in the Healthcare Innovation Lab (HIL) project.

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Not to Über - working with formal system

- Health care has multiple stakeholders
- It takes time to map out the 'ecosystem' and negotiate a solution
- Understandable tendency to be conservative
- Sub-optimisation (focusing on sub-systems not not thinking about the big picture)

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Case 2: Breathing difficulties



Chronic Obstructive Pulmonary Disease (COPD aka COLD, COAD)

What is it?	A chronic lung disease - poor airflow
What are the main symptoms?	Shortness of breath, coughing, sputum
What are the main causes?	Tobacco smoking, air pollution including cooking on open fires, genetical predisposition
How many people have it?	329 million suffer from it 2.9 million die from it each year [2013]
How big is the global economic impact?	USD 2.1 trillion [2010]

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What are the main problems?

- Not knowing how to live with a chronic disease like COPD
- Coping with an breathing attack by using an inhaler (can't call for help)



- Managing family and friends during an attack (can't tell them what's going on)

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What do patients currently do?

- Risk avoidance behaviours (not going outdoors when there is air pollution)
- Try to find their inhaler
- Try to send a text message to their family and friends (cannot speak during an attack)

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What are the options? (industrialised countries)



Pulse ox

- Heart rate
- Blood oxygen level
- Steps

25-06-2015

Propeller health

Intelligent Bluetooth button to keep track of medication use

Bluetooth beeper

Integrated in inhaler to locate it when needed

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How does it work? (industrialised countries)

Solution

- ❖ Monitors the patient's health status via oximeter and heart rate sensors
- ❖ Warning if status is getting critical
- ❖ Shows exercises and how to take medicine
- ❖ Calendar to warn about adverse conditions



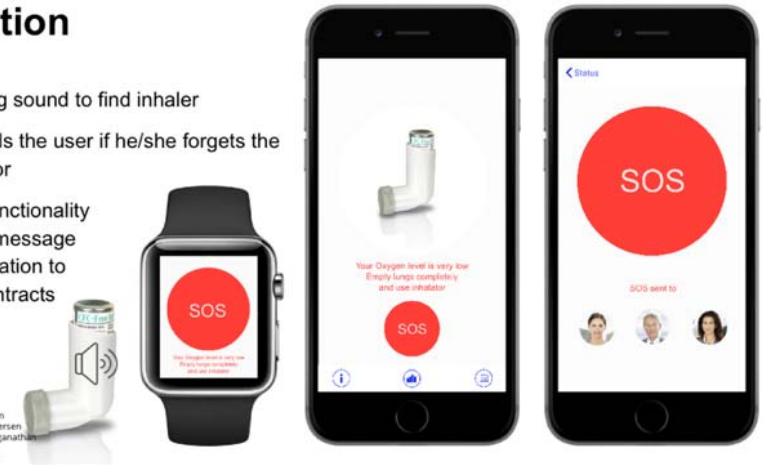
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s120036 Christian Holm-Pedersen
s103220 Prashanth Shanmuganathan
s094096 Martin Heyn Skytte
s100524 Mia Louise Søgaard

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How does it work? (industrialised countries)

Solution

- ❖ Beeping sound to find inhaler
- ❖ Reminds the user if he/she forgets the inhalator
- ❖ SOS functionality sends message and location to ICE contacts



25-06-2015
s090569 Emil Alexander Holm
s120036 Christian Holm-Pedersen
s103220 Prashanth Shanmuganathan
s094096 Martin Heyn Skytte
s100524 Mia Louise Søgaard

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What's in it for the patient?

- Reduced physical discomfort
- Reduced stress and emotional discomfort

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What's in it for family members and friends?

- Reduced stress and emotional discomfort

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What's in it for health care?

Solution

- ❖ Health statistics
- ❖ Helps doctors understand the patient's condition and improve treatment
- ❖ Shares data via Apple HealthKit



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What's in it for the suppliers of inhalers?

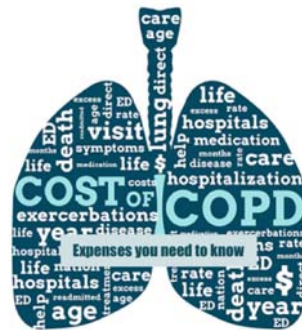
- Being able to provide a better service more safely
- Can this be done informally or does this require certification with the Food and Drugs Administration (FDI)?
- To Uber or not to Uber?

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Cost structure

Costs & Expenses

- ❖ Development team
- ❖ A beeper would likely cost around 20-40\$ - This could be paid through insurance
- ❖ Alternatively, inhaler manufacturers could be partners



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Revenue streams

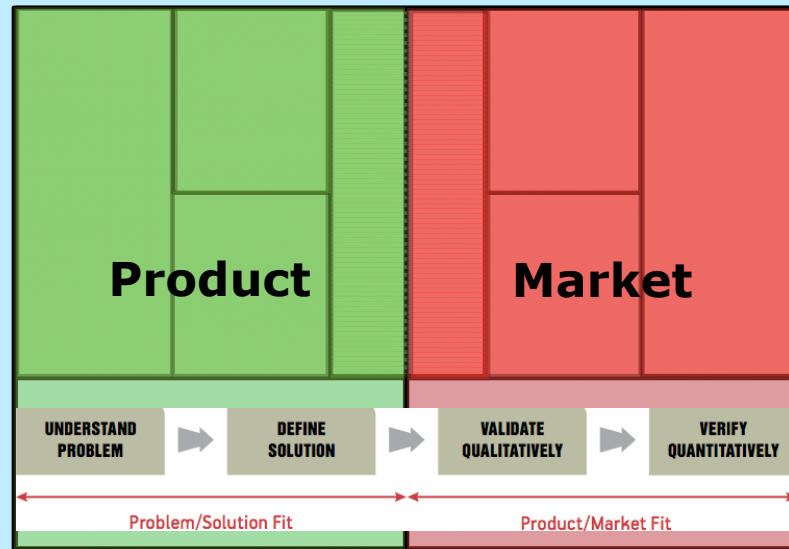
Revenue

- ❖ Monthly user payment
- ❖ Medical companies' access to ratings and statistics
- ❖ Sponsored by medicinal companies or foundations



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Context



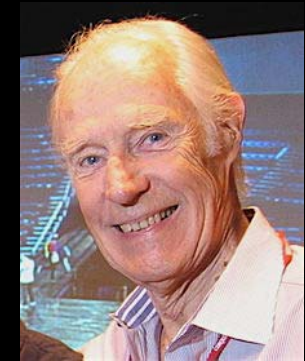
Case 3: people with hearing impairments

Persons who were born deaf



<https://www.youtube.com/watch?v=i6DHhM4PgVA>

Persons who become deaf



[Sir George Martin, producer of The Beatles](#)

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Hearing aids - Denmark has 45% global market share

WIDEX[®]
HIGH DEFINITION HEARING

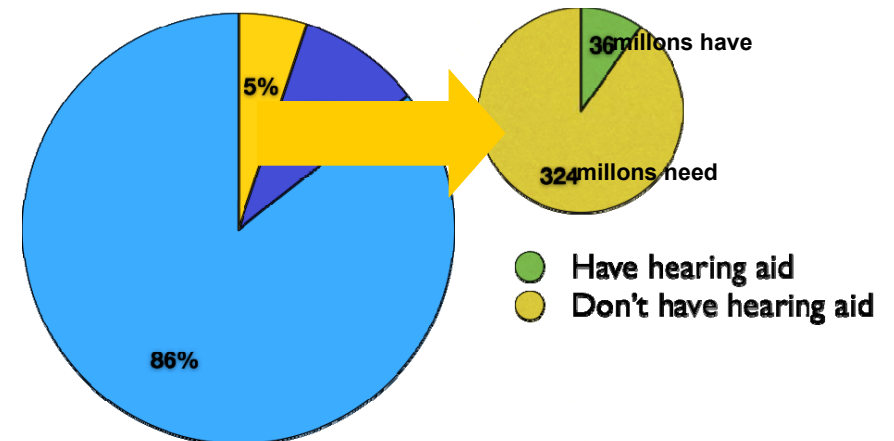
ReSound
over hearing

oticon
PEOPLE FIRST

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Hearing statistics (WHO)

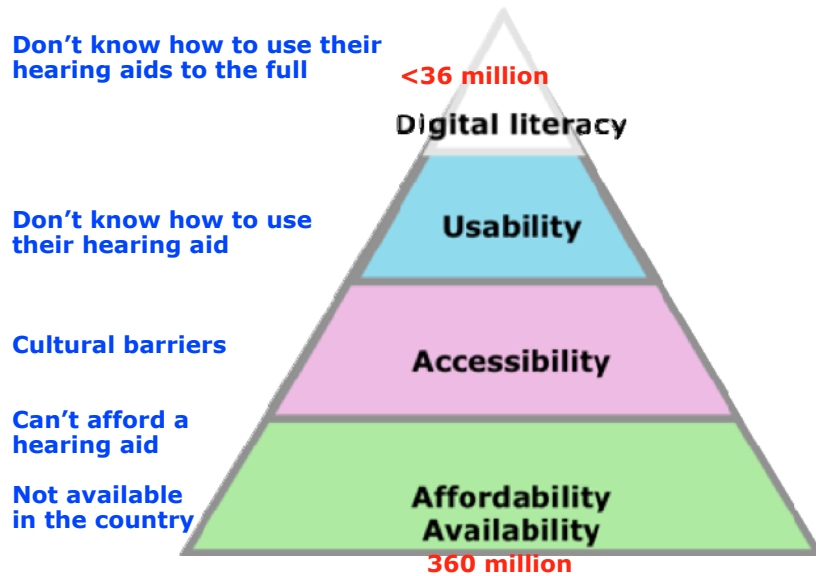
● Minor ● Serious ● No hearing impairment



100% ≈ 7,000 million people

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Hearing statistics (WHO)



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To Über or not to Über?

- Work with the formal ecosystem to help people with hearing disabilities?
- Work with the 90% of those who need something by doing something different?
- Or both?

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Most of the target audience have a mobile phone

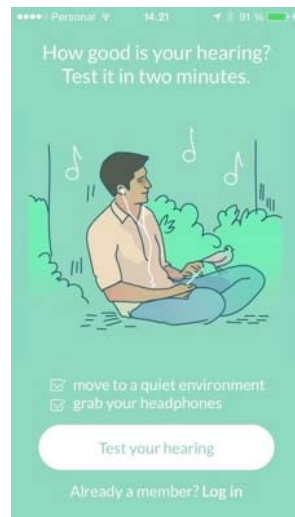
Don't know how to use their hearing aids to the full

Don't know how to use their hearing aid

Cultural barriers

Can't afford a hearing aid

Not available in the country



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The majority cannot afford hearing aids

- Offer hearing tests on the phone (no competition in areas with few doctors and audiologists)
- Offer apps on the phone that can do some of the jobs a hearing aid can do
- Look at alternative revenue streams
- Parallels to 'unused resources' at Über - private cars only used 4-5% of time

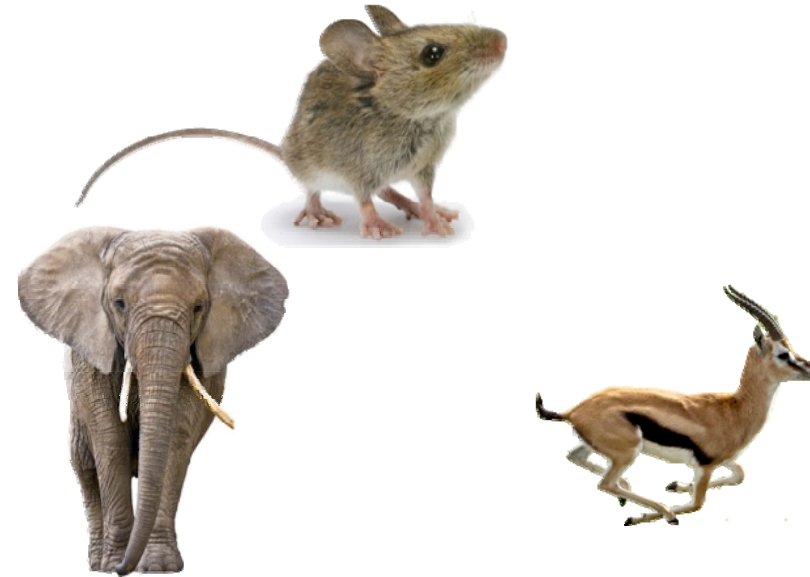
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3 cases - different strategic options

■ Businesses - the animal metaphor






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Of mice, elephants and gazelles



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Of mice, elephants and gazelles

Company category		Employees	Turnover
Top 500 (big)		>250	
Medium-sized	 	<250	≤ HKD 500m
Small		<50	≤ HKD 100m
Micro		<10	≤ HKD 20 m

Source: http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/sme-definition/index_en.htm

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Of mice, elephants and gazelles

median age
56 years



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Of mice, elephants and gazelles

median age
56 years



Eastman Kodak
1888 (2012)

 1922
Microsoft Inc.
1975

Apple Inc.
1976

Google Inc.
1998

Facebook Inc
2004

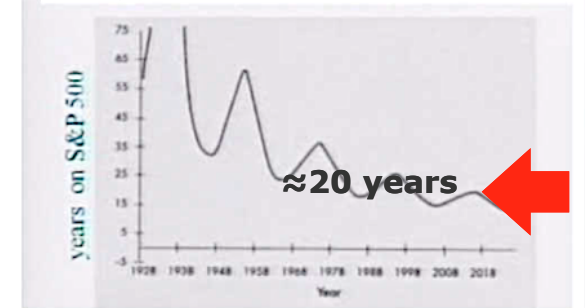
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Of mice, elephants and gazelles

median age
56 years



Average Lifetime of S&P 500 Companies



Source: Richard Foster: *Creative Destruction* (2001); Deloitte Center for the Edge

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Of mice, elephants and gazelles



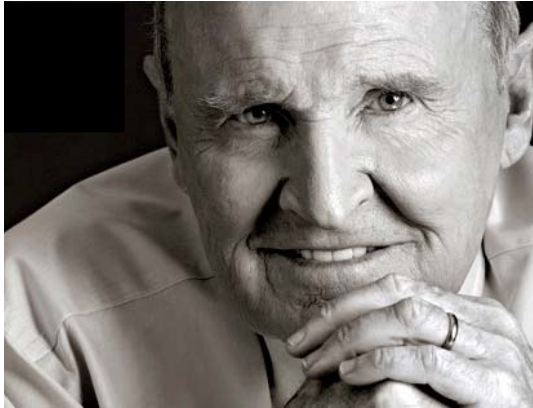
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Of mice, elephants and gazelles



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Of mice, elephants and gazelles



"If the rate of change on the outside exceeds the rate of change on the inside, the end is near." — [Jack Welch](#)



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Of mice, elephants and gazelles



"Success breeds complacency. Complacency breeds failure. Only the paranoid survive." - [Andy Grove](#)



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Start-ups: how to protect your intellectual property?



Source: Reinventing the company. The Economist print edition October 24, 2015

NOW that Uber is muscling in on their trade, London's cabbies have become even surlier than usual. Meanwhile, the world's hoteliers are grappling with Airbnb, and hardware-makers with cloud computing. Across industries, disrupters are reinventing how the business works. Less obvious, and just as important, they are also reinventing what it is to be a company.

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Conclusions

- To Über or not to Über - the balance between innovation and vested interests
- In health and wellness, there are start-up options in the informal sector
- Nation-states will have to review their competitiveness
- Rethink start-up legal frameworks

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Thank you!



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A shift from PLCs to contract law

- Start-ups are badly served by the existing legal framework
- Entrepreneurs often have no clear IP strategy to get them past the early stages into Series A and Series B funding
- A serious rethink is needed about how to help mice to become elephants and ultimately elephants!

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